

Social Institutions

1. Proposed Core Hypothesis/Question

Although a number of institutions are influential for child health and development, including child care, schools, social services, criminal justice, media, recreational services and other community-based services, we propose that child care, schools, and religious institutions are particularly influential among very broad sectors of the populations, and we therefore focus on the hypotheses listed below:

The interactions between children and families and the formal institutions in their communities will influence children's health and development.

Hypothesis 1: The physical and social environments of non-parental child care settings influence child health and cognitive and social functioning. Variations in the quality of child care affect child outcomes. Child care influences are mediated through family influences.

Hypothesis 2: Children's participation in schools will affect social, emotional, and physical development. Provision of health services and of curricula and programs targeted toward health promotion will directly impact on children's health and mental health outcomes. Child, family, and community factors interact with structural and functional aspects of schools to shape child development.

Hypothesis 3: Family participation in religious organizations during early and middle childhood (ages 3-10) results in better emotional health and fewer health-compromising behaviors during middle adolescence (ages 14-15). These effects are stronger in female children, ethnic minority and immigrant families, and impoverished areas, and when the religious organizations provide effective mechanisms for integrating adolescents into the life of the religious community.

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IV. Public Health Significance

The formal institutions available to children and families in a community are key contextual variables that influence children's development. These institutions include schools, child care facilities, youth development programs, organized recreational activities, law enforcement and justice programs, social services, religious institutions, and the media. (Health services also are included, but are addressed in greater detail by the Health Services Working Group). These institutions all have been found in more limited studies to have a significant influence on children's health and mental health outcomes. Although there have long been strands of inquiry addressing institutions as important contexts for development (particularly for emotional adjustment and mental health outcomes), there rarely have been opportunities to examine the interactions among institutions and other important developmental contexts, such as family, neighborhood, etc., or their interactions among one another. The emphasis here on specific institutions recognizes that contexts are embedded, and do not operate in isolation; rather, institutional influences are likely to be mediated or moderated through other aspects of the environment.

Many of the institutions encountered by children and families are publicly supported organizations that serve large numbers of individuals, and represent environments that are potentially modifiable in ways that enhance children's development, or settings where specific interventions or treatments can be delivered. Almost all children attend school for the majority of their childhood years; large numbers also are involved in preschool and child care programs. These represent large investments, and the extent to which these environments are supportive of the key developmental tasks of childhood could have a very large impact on health and mental health outcomes of interest. The identification of the factors within these programs that shape developmental pathways is critical to efforts to reform or reshape the organizations that serve children

Child Care. Although estimates of child care utilization vary according to study methodologies and the types of definitions used, it is clear that non-parental care is becoming a routine part of the lives of the majority of young children in the United States. Children enter child care settings at very young ages; in the NICHD Study of Early Child Care, for example, 72% of infants received some form of child care before they reached their first birthdays, and they typically spent substantial amounts of time in those settings (NICHD Early Child Care Network, 1997). Estimates from the 1999 National Household Education Survey (reported in Shonkoff & Phillips, 2001) showed that 41% of infants under age 1 were in regular child care arrangements; by age 4, more than four-fifths of all children were in child care. Although much attention has been focused on care for children in the pre-school years, child care remains an important issue for children once they enter school. It has been estimated that 44% of third graders spend at least some of their out-of-school time alone, and about 35% of 12-year-olds are routinely left alone (U.S. Dept. of Education, 2002).

Considerable debate continues in the United States about the need for public investments in child care, as well as the nature of appropriate governmental regulations and standards. To inform these discussions, there is a need for better information on the effects of child care on children's health and development. Although there have been numerous studies connecting the quality of child care to developmental outcomes for children, they often have been limited in terms of their samples, their methodologies, and their ability to follow up children over time. Moreover, there have been conflicting and sometimes confusing findings, with child care

showing beneficial or no effects in many studies, while negative outcomes have been found in other studies (c.f., Belsky, 2001; Brooks-Gunn, Han, & Waldfogel, 2002). These inconsistencies to some degree result from the failure to take into account the complexities of the interactions between child care environments and other aspects of the child's experiences, particularly the family environment.

Schools. Almost all American children attend school outside the home, and most of those children attend public school. Although there have been small studies of specific school effects on specific populations, the overall influence of the school environment remains largely understudied in any systematic way. It is well known that the quality of schools, and the environments that they offer, can vary dramatically across geographical locales; even within cities, there often are startling disparities between schools in low income areas and those in neighborhoods with more resources. The relationship between educational attainment and health is well-established in the literature; less well-understood are the myriad variables and interactions that ultimately feed into the construct of "educational attainment."

Religion. Religion is an important aspect of life for most American families. A recent poll (Barna Research, 2001) estimated that in the past week, 82% of all U.S. adults had prayed, 43% had attended services, and 19% had attended an adult religious education class. Among adolescents 13-18 years of age, 87% affiliate with an organized religion, 80% pray, and 40% pray daily. More than half of all American teens attend religious services at least monthly, with 38 percent attending every week. (Add Health data, compiled in National Study of Youth and Religion, 2002) Over half are involved in religious youth groups at some point during their high school years. Religious practice varies substantially by affiliation. Both religious affiliation and practice vary significantly by region, gender, race, and urban/rural residence. (Wilcox, et al, 2001; National Study of Youth and Religion, 2002; Barna Research, 2001)

A significant body of research on adults demonstrates linkages between religiosity and health (Hummer et al., 1999; Strawbridge et al., 2001; Ellison and Levin, 1998, Johnson et al., 2002). Religiosity also has been linked to health and avoidance of risk behaviors in adolescence (Wallace and Forman, 1998; Regnerus et al, 2002). In recent years, interest within the medical community in the potential healing power of religion has increased (e.g., Barnes et al., 2000). At the same time, policy makers have increasingly called upon religious organizations to address social problems, including adolescent risk behaviors and the needs of indigent populations. The Bush Administration has established a White House office on Faith-Based and Community Initiatives to facilitate the involvement of religious organizations in delivering social services. However, significant gaps exist in research on the role of religion in the lives and health of U.S. families, and these gaps are especially marked with respect to research on the relationship of family religious practice to child development and health.

V. Justification for a large, prospective, longitudinal study

The effects of social institutions on child health and development are best studied in a large, longitudinal study. This is necessary for several reasons.

Characteristics of social institutions are highly variable. The United States has more religious groups than any other country in the world and they are highly diverse with respect to

beliefs and practices. Similarly, variation in the availability, utilization, and quality of child care is enormous, as is variability in the characteristics of schools across individual communities. A large sample size is critical for capturing the range of children's experiences with these institutions within and across communities and across diverse groups.

The pathways through which formal institutions can support or impair children's health and development are complex. Institutional effects may operate directly, through children's direct interactions and experiences within an institution, or they may operate indirectly through influencing the way caregivers and other individuals interact with children, through shaping peer networks, or through shaping important neighborhood or community characteristics that impinge on children's development. Child care experiences are likely to be substantially mediated by family factors; the effects of family religious practice are hypothesized to be mediated through a number of intervening pathways and moderated by race, sex of the child, immigrant status, community poverty, and the specific characteristics of religious organizations. Interaction effects between different institutional characteristics (e.g., teacher training and staff ratios in child care); between institutions and other domains of the social environment (e.g. conservative religious views on discipline and neighborhood poverty), and with child characteristics (e.g. school environments and gender) are expected to be common. These interaction effects may take on increasing importance as children grow and begin to more actively choose their environments. Although small-scale studies can provide illustrative examples of these pathways, only a large-scale study that measures institutional characteristics as well as family and other contextual factors in a broadly representative sample of areas and families can study them using quantitative, multi-level approaches.

Institutional influences must be studied over time. Different institutions become important for children at different developmental periods. For example, during infancy, children more likely to be directly involved in child care situations, and as they get older, they are likely to encounter a broader range of institutional influences as they move into school and become part of other organizations, such as recreational groups, religious organizations, etc. Children are likely to experience a number of different child care environments over the course of their early years, and variations across children in terms of the types and quality of their experiences, the timing of their entry into care, and their rates of participation over time, are likely to be important. Moreover, different aspects of child care are likely to influence development during different periods in children's lives. For example, attachment is a key developmental challenge for infants and toddlers, and the quality and continuity of child care arrangements during this period is likely to have a substantial influence; later, cognitive stimulation and peer interactions take on increasing importance.

Children's experiences of schools also change over time. In general, classroom environments change every year, and as children grow and develop, they increasingly make choices that shape their own school experiences. Different aspects of schools become more salient during different developmental periods, with self-regulation, cooperation, and the development of basic skills being critical to adjustment in early periods, while peer relationships, and the development of autonomy and independence become increasingly important as children grow older.

The effects of institutional influences are cumulative over time. The long-term effects of spending extensive periods of time in child care are unknown. Although there have been very small longitudinal studies of child care outcomes (e.g., Campbell & Ramey, 1995; Schweinhart,

1993), they have been primarily limited to the impacts of specific programs. The impact over time of schools is based on reciprocal interactions, and the experience during one period shapes the interactions and experiences during the next. Religious involvement must be measured early and its effects on parenting, child development, and behavior followed prospectively in order to capture its formative influence.

Institutional characteristics cannot be measured retrospectively. Neither the past structural or functional characteristics of institutions, nor the quality and quantity of children's and families' past engagement with them, can reliably be reported.

VI. Scientific Merit

A. Child Care

Definition. "Child care", as used here, refers to the array of diverse non-parental arrangements that are used for the care and supervision of children, including informal relative care, family child care settings with non-relatives, and center-based care. The arrangements may be licensed or unlicensed, and there are varying degrees of regulation (and regulation enforcement) associated with various child care settings. We include pre-school, early education, and comprehensive child development programs, such as Head Start, in our definition.

Quality of care. Although type of child care, timing of entry into care, and number of hours spent in care all are topics of research interest, the *quality* of child care arrangements is consistently found to be associated with child outcomes in cognitive, social, and health domains (Deater-Deckard, Kinkerton & Scarr, 1996; Hayes, Palmer & Zaslow, 1990; NICHD, 1998, 2001; Phillips, Howes & Whitebook, 1992; Phillipsen et al., 1997; Rosenthal & Vandell, 1996). The nature of the relationships and interactions between children and their caregivers is an essential aspect of quality that has been shown to be related to developmental outcomes. In infancy, development of secure attachments is considered a key developmental task; the extent to which child care arrangements facilitate or interfere with the attachment of the infant with his or her mother has been a subject of investigation, as has the development of attachment relationships between the infant and the non-parental caregiver (NICHD, 1997, 1999; Roggman et al., 1994; Symond et al., 1998). The amount and quality of language and cognitive stimulation is important (Peisner-Feinberg et al., 2001; NICHD, 2000), and, as children age, the implementation of a high quality early childhood curriculum has been shown to have significant long-term impact (Campbell & Ramey, 1995; Schweinhart, 1993; Barnett, 1995; Karoly, 1998). For older children, structured, well-supervised, and meaningful after-school activities have been associated with lower behavioral problems and delinquency rates (Pettit et al., 1997).

Structural aspects of the setting are important as well. Group size, for example, has been shown to influence the incidence of infectious diseases in centers (Hardy & Fowler, 1993; Marx, Osguthorpe & Parsons, 1995) and even small increases in group size or staff-to-child ratios can have a negative impact (Bell et al., 1989; Hadler et al. 1982); staff-to-child ratios are consistently shown to be associated with developmental outcomes, including attachment, social orientation, and peer competence (Clarke-Stewart, Gruber & Fitzgerald, 1994; Howes & Whitebook 1992; Howes, 1997). Staff training may have a direct relationship to immediate health outcomes: specific training in appropriate sanitation practices have been shown to reduce infections (Ulione & Donovan, 1996; Morrow et al., 1991); training in supervision and classroom management may

reduce the rate of injuries (Ulione, 1997; Wills, 1997); and training in child development may result in less reliance on harsh disciplinary practices that may spill over into behavior that is considered abusive (Schumacher & Carlson, 1999). More general developmental outcomes also have been associated with staff education and training, with children in settings with well-trained teachers more likely to show positive cognitive and social gains (Burchinal et al., 1996; Clarke-Stewart, Gruber & Fitzgerald, 1994; Kontos & Wilcox-Herzog, 1997). The facility itself is important; even regulated centers have been found to be a source of toxins, such as lead, for children (GAO, 1994; Weismann et al., 1995), and injuries are likely to increase in settings where there is inadequate attention to the safety of playground equipment or fencing, bedding, etc. (Briss et al., 1995; Cummings et al., 1996; O'Connor et al., 1992; Ulione & Dooling, 1997).

The policy environment is important to consider in assessing the elements of quality in child care; for example, it has been shown that more systematic monitoring to ensure the implementation of standards and regulations can influence the health and safety practices of child care staff (Briss et al., 1995; Browning, Runyan & Kotch, 1996). Wages and benefits also have strong relationships to outcomes (Cost, Quality and Outcomes Study Team, 1995). There may be trade-offs in mandating high quality programs, however; requirements to implement higher standards for teacher training, for example, may reduce program supply, increase expense and thus reduce accessibility of child care for large segments of the population (Scarr, 1998)

It is probable that quality of child care varies across income levels, with low income families being more likely to rely on informal and unregulated child care arrangements. At this point, however, there is a need for much more information about the quality of child care available to low income families, and the extent to which other family factors influence the selection of child care options, regardless of quality.

Mediators of impacts. The influences of child care have been demonstrated even when controlling for family-level factors that are likely to influence development (Shonkoff & Phillips, 2001). However, the effects appear to be stronger for certain groups, such as high risk children and low income children. Child care may, to some extent, offset the effects of risky family environments, including poverty (Caughy et al., 1994) and maternal depression (Cohn et al., 1991), through offering respite to parents who are in stressful situations or through providing stimulation and structure of children who come from disorganized homes. Interactions between quality of child care and quality of family environments are a frequent topic of inquiry: for example, early child care combined and low parental sensitivity has been found to negatively affect attachment quality; timing of maternal employment may interact with child care quality and the home environment to affect cognitive outcomes (Brooks-Gunn et al., 2002).

Child care may provide important linkages to health care. Immunizations may be more up to date for children in licensed care, particularly if records are monitored (O'Mara & Isaacs, 1993), providers may be important sources of information and referral to parents, and comprehensive child care programs such as Head Start may provide health care on site as well as establish formal relationships with health providers. These service linkages, and their potential long-term effects on children's health, represent an important area for future research.

B. Schools

Health services. Schools may provide direct services that influence health and mental health. The School Health Policies and Programs Study (SHPPS) found that school nurses are commonly employed, with more than three quarters of school providing a part-time or full-time nurse (CDC, 2001). The use of comprehensive school health centers is increasing, and schools also may be important sources of linkages with other community health resources, both through informal channels and through formal referrals such as those required for students with disabilities. Schools are a major source for the provision of mental health services to children (Leaf et al., 1996), through both school personnel and on-site clinicians.

Since the early 1970's, schools have been required to serve children with disabilities, and to provide services that will enable such children to benefit from their education. Nationally, about 12% of children are classified under special education regulations as having disabilities, although there is considerable variability across states and localities; many others are served under Section 504 of the Rehabilitation Act of 1973. Many children with disabilities, however, are not classified as eligible for special education or other special services; in particular, children with Attention Deficit Hyperactivity Disorder and other children with mental disorders are likely to be underserved, although they may receive counseling or therapeutic services through other school mechanisms, or be linked to mental health resources through school personnel (Bussing et al., 1998).

Health promotion. School curricula directly related to health can be influential: health education and health promotion curricula are employed in many schools. The availability of physical education programs has been shown to influence the development of obesity and may have other long-term benefits as well; however, the SHPPS found that only a small percentage of school children have daily physical education or its equivalent. Nutritional programs in school (school breakfast and lunch programs), as well as the school's encouragement of good nutritional practices through providing adequate lunch periods with nutritious foods, discouraging students from eating off-campus, and restricting the availability of fast foods within the school, all may contribute to children's health status. Programs aimed at the prevention of risky behaviors are increasingly common in schools, from elementary school onward. Almost all schools report using programs targeted toward the prevention of violence, alcohol, tobacco, and drug use, accidents, and/or high-risk sexual behaviors (CDC 2001).

Structural and interactional features. Less obvious school-related variables are likely to influence health more indirectly, through cognitive and social development: children with poor academic functioning are likely to engage in more risky health behaviors as they get older, and children with poor social adjustment early in their school careers are at higher risk for developing mental disorders (Dryfoos, 1990; Greenberg et al., 1999). A lack of strong instructional practices has a negative effect on student outcomes, particularly for those students with developmental vulnerabilities (NRC, 2002). Instructional weaknesses are most evident in low income schools, which have fewer financial resources relative to the needs of the children they serve (Elliott, 1998; NRC, 1999; Kain & Singleton, 1996), and have more difficulty attracting and retaining qualified teachers (Ferguson, 1991). Class size (Finn & Achilles, 1999) and ability grouping practices, which may begin very early, can limit the types of opportunities available to students, as well as create peer environments that promote or exacerbate existing

behavior (Kellam et al. 1994). School climate, including teacher expectations, promotion of cooperation or competition, inclusiveness of parents and community members, and feelings of safety and security, also can be important (Roeser & Eccles, 2000). Parent involvement has consistently been shown to be important, particularly in the early years, but the extent to which schools encourage and foster such participation is variable, and tends to be negligible once children move out of elementary school (Carnegie Council, 1995; Eccles & Harold, 1993; Epstein, 1996). School-community linkages, including the availability of extra-curricular activities and other structured after-school programs, become increasingly important as children move into the adolescent years (Roth et al., 1998).

The influences of schools may shift as students move into adolescence: adolescents need opportunities for independent decision-making within safe environments, to explore different identities, and to develop self-management skills (Eccles, 1996). Structures of middle schools and high schools may be at odds with the developmental tasks faced by children as they make this transition (Eccles, 1996). There often is an increase in school size and a decrease in individual attention at a time when students need more protected environments and sustained relationships with adults.

Children's perceptions and experiences of schools also are important contributors to outcomes. School engagement; feelings of self-efficacy of mastery; perceptions of learning environment (clear school goal structures, positive teacher regard); and strong attachments to teachers may be protective factors for substance abuse, mental disorders, suicidality, early pregnancy, and violence (c.f., Deci et al., 1991; Manlove, 1998; Resnick et al, 1997; Roeser & Eccles, 1998).

School facilities. School facilities potentially are a significant source of environmental hazards. Although research is scarce, the GAO estimated in 1995 that about 60 percent of the nation's schools were in need of major repairs (GAO, 1995). The number of aging facilities and schools in disrepair, along with the absence of comprehensive research and coordinated public policy, led the American Public Health Association in 2001 to issue a policy statement raising concerns about exposure of children to environmental hazards including lead, radon, mold and moisture, asbestos, inadequate plumbing, poor lighting, and indoor air pollution (APHA, 2001). The APHA statement also noted that schools are also a potential source of chemical toxins, such as cleaning and instructional supplies, pesticides, etc. Children in low income and urban areas are more likely to attend schools that are in need of repair or that are in areas where environmental hazards are more prevalent. Apart from the physical risks, deteriorating school buildings detract from the learning environment and require the diversion of resources away from the school's instructional mission.

C. Religious Institutions

Defining terms. A family's *religious practice* can comprise both private and public behaviors. Private behaviors include prayer and family rituals related to religion; public behaviors include affiliation with a *religious organization* (a church, synagogue, mosque, etc.), attendance at services or religious education classes, or other related activities (e.g., serving on a church board, participating in a youth group). The term *religiosity* is generally used to incorporate both religious practice and the importance of religion to an individual. *Religion*

refers to the general domain of faith-related institutions, behaviors, and beliefs, while *religious affiliation* refers to the specific religious group one identifies with or belongs to.

Religion and child health. Research on the determinants and consequences of children's involvement in religious organizations is uneven, with some topics well researched and others severely under-studied. Consistent with research on the association between religious affiliation and religiosity and health in adults, a significant body of research links a broad range of adolescent health behaviors (both positive and negative) to religiosity. Compared to their non-religious counterparts, religious adolescents (those that attend services regularly and say religion is important to them) are more likely to use seat belts, have healthy diet, exercise, and sleep habits, greater self-esteem, and are less like to initiate sex at an early age, drink, smoke, and engage in delinquency. (Regnerus et al, 2002; Wallace and Forman, 1998). Generally, religiosity is more important than religious affiliation in influencing adolescent health behaviors.

A comparable body of research linking health in pre-adolescent children and indicators of family or child religiosity does not exist. An exhaustive review of research on the relationship between religion and health and wellbeing reported only one study involving pre-adolescent children (Johnson et al., 2002). However, many studies have examined family functioning in relation to family religion and religiosity. Most of these studies have focused on the greater use of corporal punishment and emphasis on obedience among conservative Protestant families (Mahoney, et al., 2001; Ellison et al., 1996). (A few studies have shown that these groups and are also more likely to hug and praise their children and are less likely to yell at them (Wilcox, 1998; Bartkowski and Wilcox, 2000)). Other research has linked religiosity with the use of authoritative styles of parenting (Gunnore, et al., 1999), warm family relationships (Pearce and Axinn, 1998), and father's involvement in parenting (Roggman et al., 2002).

A few studies have examined potential negative effects of religious affiliation and practice. For example, Asser and Swan (1998) document child deaths associated with failure to obtain medical treatment motivated by religious beliefs. Pargament and colleagues (1988) have demonstrated negative effects of maladaptive "religious" coping styles and notes that religious groups can create stress through ostracism, social pressures, and excessive demands on congregants.

Mechanisms of influence. Following Wallace and Williams (1997), we propose that religious organizations may influence parents and children via three mechanisms: social control, social support, and values and identity. Social control effects derive from the explicit normative values promulgated by religious organizations and members' integration into social groups supporting and enforcing those norms. Furthermore, participation in religious organizations increases "network closure" (the extent to which people know and interact with each other) among children, parents, teachers, children's friends, and friends' parents (Smith, forthcoming). Greater closure in the child's network is likely to enhance social control of norms and behaviors.

Social support effects reflect the instrumental, emotional, and informational resources available through engagement in social networks formed through religious organizations. Instrumental and emotional support help to buffer stress and strengthen the cohesiveness of

networks, reinforcing their ability to enforce norms. Information exchange may be positive or negative for health, depending on the nature of the information exchanged.

Finally, religious identity implies development of a self-concept that embraces religious values, beliefs, and meanings. These may facilitate health by providing stress-buffering psychological resources (faith, hope) and by discouraging health-damaging behaviors. Research has examined the influence of religious organizations on health through this mechanism. Most research on the influence of religion on adolescent health focuses on “socialization” effects, that is, on social control and social learning mechanisms that induce conformity in religious youth (Regnerus et al., 2002).

Religion is a domain separate from family yet shaped by it (Regnerus et al., 2002). Families create their own religious environments and are in turn influenced by them. Participation in religious organizations is an important aspect of the religious environments that families create. Family religious practice will influence children’s health and development via effects on parenting, the child’s social context, and the child’s internalization of values:

- Documented associations between religious practice and parenting suggest an indirect influence on child health through parenting. Family warmth and functioning has been linked to children’s physiological functioning, emotional regulation, and social competence, and through these, to children’s health (Repetti et al., 2002).
- Family religious attendance also engages the child in non-family social networks comprised of children and adults who share similar beliefs and values. These may provide an important “secondary socialization influence” (Wallace and Williams, 1997), a setting in which emotional regulation, social competence, and pro-social values can be reinforced.
- Finally, family religious practice exposes children to religious teachings that impart specific values and moral lessons that may influence behavior. The impact of such teachings is reinforced by private family religious practices such as prayer and religious ritual.

These influences are expected to cumulate over the course of development. As adolescents acquire increased autonomy (a factor which itself is likely to vary according to family religious affiliation and religiosity), nonfamily influences will gain increased importance in adolescents’ religious participation. These influences include peers’ attendance at services (Gunnore and Moore, 2002), opportunities that religious institutions provide for youth involvement (e.g., youth groups), and mass media (Dudley and Laurent, 1988). On average, those adolescents who have been raised in religiously active families will be more likely to attend services and exhibit high levels of religiosity in adolescence. Among those adolescents who remain religiously active, the health effects noted above with regard to family religious practice will continue and may even become more marked as the social networks associated with religious memberships become more selective of pro-social youth. Among those adolescents who discontinue active religious participation or who rate religion as low in importance, family relationships may deteriorate if the adolescent’s decision prompts family conflict. Whether or not such conflict would undermine a protective value of early religious experience is unclear. Research suggests that adolescents who turn away from religion may be more likely to engage in deviance (Peek et al,

1985) and that cardiovascular risk is higher in adults whose religious affiliation differs from their mothers (Newman and Chi, 1998).

These processes will be moderated by sex, race/ethnicity, immigrant status, neighborhood poverty, and characteristics of the religious organization. Girls tend to be higher in religiosity and more affected by religious influences (Regnerus et al., 2002). African American girls are more likely to “inherit” their parents’ religiosity than girls of other races and ethnicity (Heath et al., 1999). Among immigrants and the residents of poor neighborhoods, religious organizations may play an especially important role because of the lack of other institutions available to engage and support families. Finally, when families participate in religious organizations that are more socially cohesive, and that provide a range of activities able to sustain children’s involvement in the organization through adolescence, their participation will have greater effects on child health and development.

VII. Potential for Innovative Research

Opportunities for observing developmental trajectories within multiple contexts have been rare, and studies focusing on the interactions between children and context often have not taken institutions into account. Moreover, the extent to which organizations interact with one another is largely unexplored, although there are examples from the prevention literature that suggest that systems-level interventions can have significant impacts. Holder et al., (2000), for example, designed a community-level program aimed at reducing alcohol abuse that involved police, schools, community service organizations, business establishments, and local lawmakers.

To date, there have been no *population-based*, prospective longitudinal studies that examine the influences of child care on children’s health and development. The most comprehensive study to date, the NICHD Study of Early Child Care, has been conducted in 10 sites across the country and, to date, has followed about 1300 children from birth through early elementary school (the study will continue to follow the children into the adolescent years). The participants, however, are not representative of the U.S. population; in particular, low income children are underrepresented. The Early Childhood Longitudinal Study – Birth Cohort Study will collect child care data on a nationally representative sample of children, but children will be 24 months old before the first observation. The opportunity to examine the interactions between family environments and child care environments, and to observe the outcomes of those interactions over time and across subgroups is unprecedented.

Similarly, the impact of school characteristics on children's health and development remains largely unstudied. Although the Department of Education has undertaken a number of studies, none has offered the advantage of a prospective, longitudinal study that can examine the complex interactions between children and schools over time. The Early Childhood Longitudinal Study - Kindergarten study, currently underway, will provide important information about these relationships for children in elementary schools, but the study does not sample children until they are in kindergarten. Thus, important early childhood experiences that are likely to affect children's school adjustment and trajectories will not be studied.

Research on the effects of family religious practice on the development and health of children does not now exist. Conducting this research in the context of the National Children's Study would allow the examination of a broad range of outcomes, including children's physiological functioning as well as social and emotional development. The influence of early family religious practice on children's health and behavior in adolescence is similarly unstudied; the NCS could make a substantial contribution in elucidating under what circumstances early religious experience exerts a protective influence in adolescence. Incorporation of multiple dimensions of religious practice in the NCS would significantly extend the ability to understand what it is about family's religious involvement that influences health.

VIII. Feasibility

Given the inherent complexities of likely institutional influences, narrowing the questions and carefully choosing what to measure will be important. Measurement of institutional influences will be required at several time-points during childhood; as children grow, their interactions with institutions will change and broaden, with different institutions coming into prominence during different developmental periods, and different dimensions of those institutions becoming more salient at different time points in the course of childhood. The timing of measurements might correspond to key transition periods, although it must be acknowledged that transitions do not occur at the same time for all children.

A. Child Care

Since child care environments are likely to change over time, data ideally would be collected annually during the preschool years, once during the year that the child enters school, once during the 6-8-year period, and once during the 8-11-year period.

Although some elements of child care can be assessed through parental interviews, administrative records, and, to some extent, through child care provider interviews, essential elements of quality must be assessed through direct observations of child care settings. Although previous studies have developed protocols for assessing quality, this is likely to be an expensive undertaking. Nonetheless, we believe that methodological strategies for collecting detailed data on child care quality must be developed and implemented at least within a few intensively studied sites.

Domains for measurement include:

1. Parents' decision-making about whether, when and where to place child in care
2. Timing of placement in child care, hours spent in care over time, number of settings and length of placements
3. Quality of child care setting, including structural aspects (facilities, group size, staffing ratios, staff qualifications) and functional aspects (relationships and interactions between caregivers and children, continuity in relationships, curriculum, attitudes and values of staff)
4. Aspects of the policy environment that influence parents' decisions about care
5. Aspects of the policy environment that influence child care quality
6. Facilities – exposure to toxins, safety hazards; sanitation practices

7. Direct and indirect assessments of child outcomes

Burden: assessment interview time is the major burden for parents and children. Child care providers, particularly in informal and unregulated settings, may experience data collection as intrusive and have concerns about confidentiality.

B. Schools

Data should be collected, at a minimum, at key transition periods for children: upon entry into school, during middle childhood (ages 8-10), as children enter adolescence, and as they prepare to leave high school.

Many of the constructs relevant to schools can be assessed through caregiver or child interviews, or through public records. The National Center for Education Statistics maintains a number of data sets that track key school characteristics: the Common Core of Data, for example, has individual school-level information on many variables. Obtaining information on school facilities, curricula, health services, health promotion, and prevention programs would likely require contacts with the schools themselves.

Domains for measurement include:

1. Health services: availability of health and mental health personnel, and formal linkages between schools and community health providers.
2. Health promotion curricula, programs and policies
3. Structural and functional features of schools, including makeup of student population, staffing, peer norms, school climate, instructional focus, extracurricular activities
4. Student engagement and attachment to school, achievement, motivational influences, peer interactions, aspirations.
5. School facilities, including exposure to hazardous conditions, availability of adequate resources

C. Religious Institutions

Data should be collected during the pre-school years (age 3-5), middle childhood (ages 8-10), and middle adolescence (14-15). Data on the religious affiliation, religiosity, and religious practice of the mother and father should be collected prior to birth.

Required measures (for both parent and child, where appropriate), to be collected via interview except as noted:

- Attitudes, including the personal importance of religion, attitudes toward methods of discipline

- Beliefs, including those reflecting fundamentalism and views of the child's inherent nature
- Religious affiliation
- Religious practice, including attendance at services, religious education classes, and other activities of the religious organization, prayer and religious ritual in the home
- Percent of social ties that attend the same religious organization
- Parenting practices, including discipline, monitoring, warmth
- Family conflict
- Family roles (mother's and father's parenting, household, and earner roles)
- Characteristics of religious organization (teachings, policies, social cohesion, activities for children, youth and adults, size – requires data collection from organization).
- Child health, development measures and adolescent risk behaviors

Burden on participant and family: Burden associated with interview time. Child care providers, particularly in unregulated and home settings, might find direct observations intrusive and threatening.

Ethical considerations: Care should be taken to treat religious differences with sensitivity and to minimize concerns that results could stigmatize specific religious groups.

Other institutions: Although this document has focused on child care, schools, and religious institutions, we recognize that other social institutions may be equally influential in children's health and development, and we therefore recommend that measurement strategies be developed for assessing families' interactions with these other institutions:

Social services are commonly used by large numbers of low income families and other families likely to be at high risk, and these services may be critical to the functioning and survival of some families. In particular, we note the large number of children who are investigated by child protective services each year (2.8 million in 1999), and the number who are placed in foster care (179,000 new placements in 1999); these children are likely to present with compromised health and development. Family and child contacts with social services, as well as information about the scope and nature of those services, should be assessed.

The criminal justice system impinges on the lives of large numbers of families and children in many communities. Children may be directly involved with the juvenile justice system (which may in turn provide linkages to other health and mental health services), or they may be affected by the incarceration of one or both of their parents. Criminal justice domains to be considered for measurement include the extent to which crime is a problem in communities, arrest and incarceration rates in a community (and who is affected); specific programs and policies instituted through criminal justice system (e.g., community policing, police athletic leagues etc.); perception of police and justice systems by children and their caregivers; and family member's involvement with the system.

Media influences are likely to be complex and highly varied. Potential domains of interest for measurement are children's use of television, video games, movies, and the internet and the content of media used; parental supervision and control over children's media use; local media content on health-related topics (e.g., violence, use of tobacco and alcohol, food advertising) and the presence in the community of specific media-based interventions or educational programs.

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